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(21) International Application Number: <b>PCT/DK93/00103</b> (22) International Filing Date: <b>22 March 1993 (22.03.93)</b> (30) Priority data: 0441/92                      1 April 1992 (01.04.92)                      DK (71) Applicant (for all designated States except US): <b>PHARMA-PLAST INTERNATIONAL A/S [DK/DK]; Haarlev Mark 2, P.O. Box 17, DK-4652 Haarlev (DK).</b> (72) Inventor; and (75) Inventor/Applicant (for US only) : <b>KORNERUP, Grete [DK/DK]; Skovdalen 7; DK-4690 Haslev (DK).</b> (74) Agent: <b>LARSEN &amp; BIRKEHOLM A/S; Skandinavisk Patentbureau, Skagensgade 64, P.O. Box 200, DK-2630 Taastrup (DK).</b>		(81) Designated States: <b>AT, AU, BB, BG, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</b>  Published With international search report.	
(54) Title: <b>URINE BAG WITH SUSPENSION MEANS</b>			
(57) Abstract  The invention relates to a urine bag (19) comprising two welded layers (2, 3) of plastic sheeting, which bag is intended for use in collection of human liquids, such as urine, blood or similar liquids from a patient in a hospital or an infirmary. By means of welding seams (4, 5, 6) the two layers of sheeting (2, 3) are welded together so as to create a chamber for receiving the liquid in question, and the bag has an aperture (8) so that the liquid by a tube (9) or a hose (10) can be led into the room. The bag (1) may also have an outlet (15) for draining the bag. Along the lateral edges (19) breaking points or lines of weakening, for example full or partial punchings or perforations (25), are provided between the welding seams (5) and the lateral edges (19) of the bag, whereby the breaking points are outside the chamber. Upon tearing the breaking points (25) two straps (29) or pairs of ribbons are produced at each side of the bag (1), which straps or ribbons can be tied together in pairs around a rod (30) which may be part of the patient's bed.			

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URINE BAG WITH SUSPENSION MEANS

5 The invention relates to a urine bag comprising two welded layers of plastics and having means for suspension of the urine bag on a frame or a similar object, for example a rod which constitutes the upper limit of a bedside, which suspension means are straps which can be tied together around the frame or the similar object.

10 Bags of plastics are increasingly used as bags for collecting urine, blood or other human liquids from patients in hospitals, infirmaries or similar places. When the bag is intended for collection of urine, the bag is connected to the patient in a suitable manner, and the bag  
15 is placed in a low position in relation to the patient so that the gravitational effect can be exploited when the urine is to be led from the patient to the bag.

20 The bag must be placed in a safe manner so that the bag will not fall down and thus, perhaps, interrupt the connection between the patient and the bag. Therefore, the bag is fastened to a frame or a similar object which may be a horizontal rod being part of a hospital bed. Several kinds of suspension means are available for this fastening  
25 to the object or rod. These means may be hooks which can be inserted into holes in the urine bag whereupon another part of the hook or hooks is applied to said rod.

30 From US patent No. 3 370 589 another mode of establishing suspension means is known. This known bag consists of two layers of sheeting welded together along the edges of the bag in order to create a chamber in the bag, and in a known manner also an aperture is established, so that the bag can be attached to a tube or a hose for the filling of the bag.

35

On each of the two lateral faces at the upper end of the

bag in use there are welded straps of plastic in order to produce two ribbons that can be tied together around said rod on the patient's bed or on a frame.

5        However, this is an expensive solution to the problem of suspension, as the two straps have to be welded to the layers of sheeting of the bag, which requires further phases of work in production of the known bag.

10       Therefore, the production of the actual bag requires a first operation during which the two layers of sheeting, which constitutes the bag, are cut out and welded together by applying commonly known technique.

15       Furthermore, two loose ribbons will have to be produced which ribbons are to be welded onto each side of the bag in a subsequent phase of operation, and during this welding phase three individual parts are thus to be controlled in relation to each other, i.e. the bag itself and the two  
20       ribbons on each side of the bag.

The patent illustrates only two ribbons which unitedly allows fastening of the bag to a bed, as the free ends of the ribbons are connected around a suitable rod in the bed.  
25       These ribbons are placed at the center of the upper edge of the bag, and this results in an unstable suspension where the bag may swing from side to side during application of the bag, when the user moves in his bed and thus moves the hose leading to the bag.

30       This drawback in the known bag may be overcome by welding two pairs of ribbons to the upper edge of the bag, i.e. one pair of ribbons at each of the two corners of the bag, but this feature would require control of five individual parts  
35       in relation to each other, i.e. the actual bag and two ribbons of each of the two pairs of ribbons.

Therefore, it is the object of the invention to define a suspension device which makes a correspondingly simple suspension possible, which suspension, however, is achieved in a much more inexpensive manner and in one single operation of work, as also a reliable suspension of the bag during use is to be achieved.

This object is achieved with a urine bag of the type referred to above, which urine bag according to the invention is characteristic in that the straps consist of two pairs of ribbons where each pair of ribbons is produced along each lateral edge of the bag in the form of breaking points or lines of weakening, for example full or partial punchings, each of which straps at the upper edge of the bag in use are integrated with the layer of sheeting from which the straps are derived.

By this relatively simple feature the bag according to the invention can be produced in one single operation, as the tool applied for the welding of the two layers of sheeting of the bag may also have means for producing breaking points or lines of weakening in the two layers of sheeting simultaneously with the welding procedure. When the lines of weakening are being broken it is thus possible to release the straps from the bag along the majority of their length.

Therefore, as with the known bag, there is no requirement for extra operations during production in order to provide the bag with straps for use when the bag is to be suspended. On the known bag there is provided one strap only on each of the sides of the bag, whereas on the bag according to the invention it is easy to produce two straps on each of the sides of the bag, viz. one strap along each of its sides, which ensures that the bag is reliably suspended in a more secure manner than that of the known

bag, as possibility is now provided for tying the straps of the opposite sides of the bag at each of the two lateral edges.

5 It is advantageous to create the straps by means of breaking points or lines of weakening, for example in the form of full or partial punchings or perforations, in the two layers of sheeting of the bag, as the ribbons required for the tying together are thus provided in an expedient  
10 manner. These punchings are, of course, not to be extended fully up to the upper edge of the bag in use, and the punchings can extend advantageously along each of the two lateral edges of the bag.

15 After the breaking of the breaking points or lines of weakening the straps or ribbons remain stuck on the bag in order to carry the bag and its contents.

20 Further, the punchings may advantageously be so shaped that the straps at the lower end of the bag are released from the other parts of the bag whereby a tap is achieved which tap will be pulled when the perforations are broken for producing the straps.

25 Said perforations produce breaking points or lines of weakening which may cause that one or several of the straps are torn off the bag during filling of the bag, and for that reason reinforcements are provided at the upper end of the bag at the ending of each perforation.

30 The urine bag according to the invention is now explained in detail with the reference to the drawing, wherein

35 fig. 1 is a plane view of the preferred embodiment of the urine bag according to the invention,

fig. 2 is a section of the upper corner of the bag in fig. 1, which section shows a reinforcement at the link between a perforation and the other parts of the bag, and

fig. 3 is a perspective view of the urine bag in fig. 1 in its suspended position.

The bag 1 shown in the drawing consists as suggested in fig. 3 of two layers of sheeting 2, 3 of suitable plastics which by means of welding seams 4, 5, and 6 (fig. 1) are welded for creating the bag 1 which is thus provided with a chamber for collection of liquids, such as urine from a patient in a hospital or an infirmary.

The welding seams 4 define the chamber upwardly, the welding seams 5 close the chamber along the sides, and the welding seams 6 close the chamber at the bottom.

The bag 1 in use has at its upper edge 7 an aperture 8 for reception of a tube 9 or a hose 10 by which the bag 1 is filled with said liquid.

The aperture 8 is created by means of additional welding seams 11 extending from the upper edge 7 of the bag 1 and to the welding seams 4 which are intended for closing the bag at the top. The layers of sheeting 2, 3 and the welding seams 4 and 11 are so configured that the tube 9 or the hose 10 are tightly connected to the bag 1.

Along the lower edge 12 of the bag welding seams 13, 14 are provided to reinforce the bottom of the bag, where preferably an outlet 15 with a closing member 16 is provided, which closing member 16 can be opened, if the bag is to be emptied, or if a sample of the contents of the bag

is to be collected.

5 The closing member 16 is connected to a tube 17 which like the tube 9 or the hose 10 is tightly connected to the bag by welding seams 18 extending from the lower edge 12 to the welding seams 6, which seams define the chamber downwardly.

10 Along the upper edge 7 of the bag 1 and a short distance along each of the lateral edges of the bag welding seams 20, 21 are provided for reinforcement of the upper part of the bag intended for carrying the bag with its contents.

15 During application, the bag is to be suspended in a low position in relation to the patient who is to be cared for, and for suspension by means of commonly known suspension members in the form of hooks (not shown in the drawing), the bag 1, in each of the two regions 22 defined by the welding seams 4, 11, 20, and 21, is provided with holes 23, the edges of which are reinforced by welding seams 24.

20 However, according to the invention, the bag 1 is also intended for suspension without application of hooks or similar kinds of external suspension members, as the bag 1 can be suspended solely by means of straps which are an integrated part of the material of the bag.

30 This is achieved by breaking points or lines of weakening, such as punchings or perforations 25 which extend from the lower edge 12 of the bag and along the lateral edge 19, between this edge and the welding seam 5 which define the chamber along the side of the bag.

35 The perforation 25 ends in the area 22 defined by the welding seams 4, 11, 20, and 21, whereby the perforation 25 opens into a hole 26 which is substantially circular in order to avoid the breaking point created at the

perforation 25, which breaking point may cause tearing of the layers of sheeting 2, 3 in continuation of the perforation 25 when the bag is loaded with the contents.

5 To reinforce the edge around the hole 26, several welding seams 27 are provided around the hole, which seams 27 extend from the welding seam 4 or its extension 28 to the welding seam 21.

10 Preferably, along each lateral edge 19 a perforation 25 is provided, which perforation 25 ends in a hole 26 reinforced by circumferential welding seams 27.

15 When the bag 1 is to be suspended, the perforations 25 are torn whereby two straps 29 are produced along each lateral edge 19, which straps, as shown in fig. 3, can be tied together around a rod 30 which may be part of a bed on which the patient rests.

20 Said two straps 29 along each lateral edge 19 are produced in that the perforations 25 are placed between the lateral edges 19 and the welding seams 5, which define the chamber at its sides. Upon breaking the two layers of sheeting 2, 3 are released from each other substantially along their  
25 total length, and after the tearing they will only be mutually connected at the welding seams 20, 21, and 28.

To facilitate the tearing of the perforations 25 cuttings  
30 31 are configured at the lower edge 12 of the bag from the edge 12 to the perforation 25.

In order to illustrate the use of the cuttings 31, printed instructions may be printed, for example, the word "tear" and indicated by an arrow pointing at the cutting 31.  
35

In a relatively known manner the bag 1 may have graduations 32 which can be used when the volumetric contents of the bag is to be read.

- 5 The bag according to the invention offers a bag with a suspension device which is an integrated part of the bag, and consequently the suspension device in the form of the straps are always at hand when the bag is to be applied. By means of said straps or said two pairs of ribbons a
- 10 reliable suspension of the bag during application is achieved. Furthermore, the bag with the suspension device is produced in one single operation, as the welding seams, the perforations, and the punchings of the finished bag are executed in the same tool.

## P A T E N T   C L A I M S

1. Urine bag (1) comprising two welded layers (2, 3) of plastics and having means for suspension of the urine bag on a frame or a similar object, for example a rod (30) which is the upper limit of a bedside, which suspension means are straps which can be tied together around the frame or the similar object, c h a r a c t e r - i z e d i n that the straps (29) consist of two pairs of ribbons where each pair of ribbons is produced along each lateral edge (19) of the bag (1) in the form of breaking points or lines of weakening, for example full or partial punchings (25), each of which straps (29) at the upper edge (7) of the bag (1) in use is integrated with the layer of sheeting (2, 3) from which the ribbons (29) are derived.
2. Urine bag according to claim 1, c h a r a c t e r - i z e d i n that the straps (29) consist of two identical ribbons each extending from their layer of sheeting (2, 3), and that the straps (29) are free at the lower edge (12) of the bag (1) in use.
3. Urine bag according to claims 1 or 2, c h a r a c t - e r i z e d i n that the partial punching is constituted by perforations (25) which are arranged to release the straps (29) when torn.
4. Urine bag according to any of the claims 1-3, c h a - r a c t e r i z e d i n that at the upper edge of the straps (29), i.e. at the passage on to the bag (1), there are reinforcements (29), preferably in places (26, 28) where breaking points are provided.

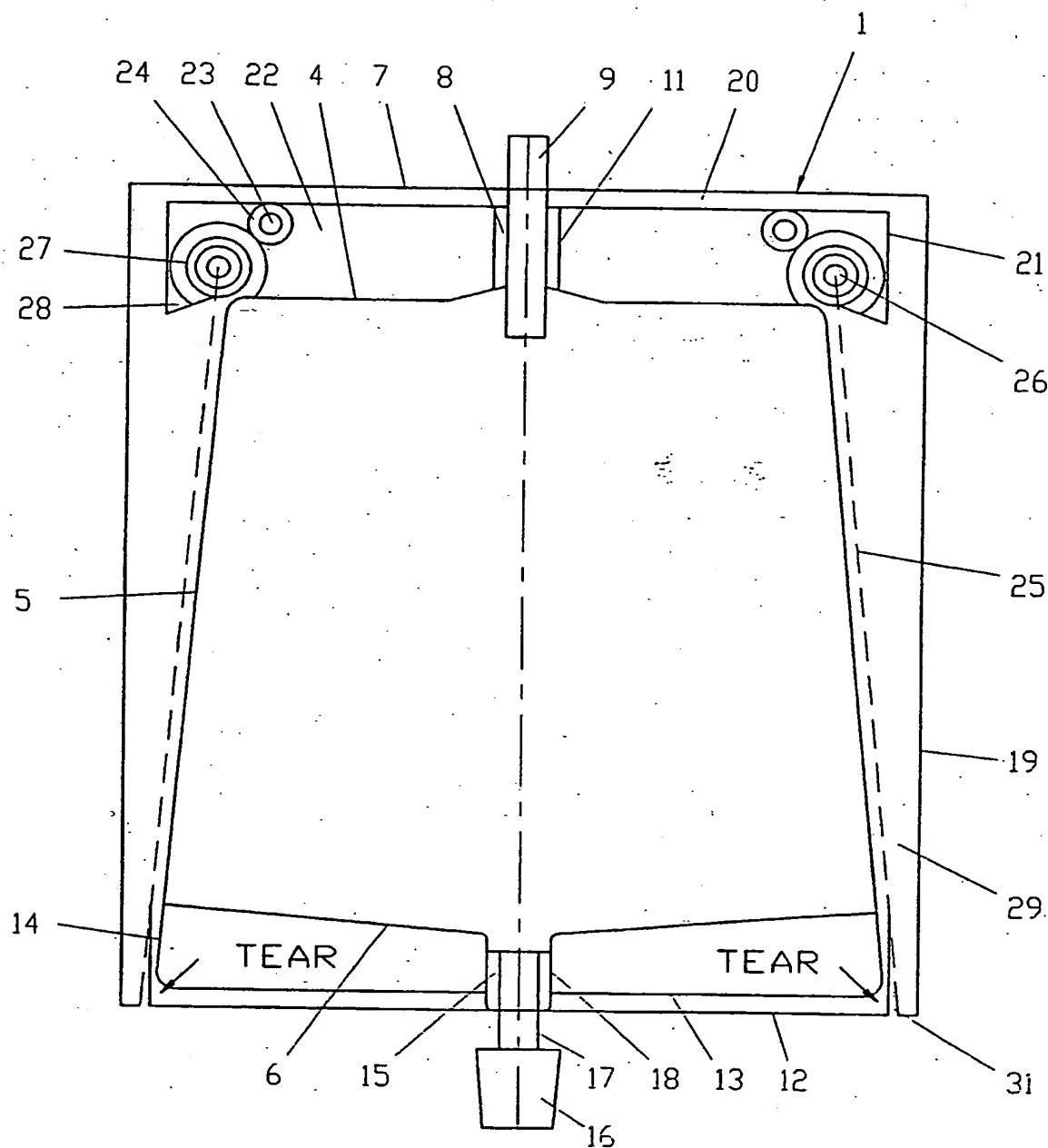
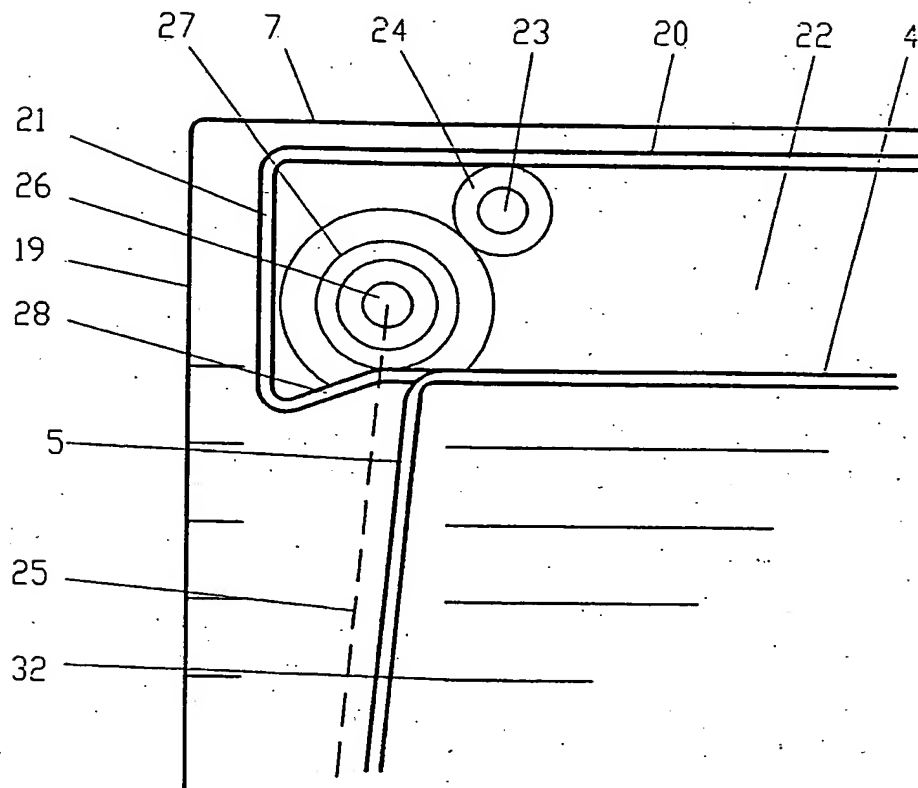


Fig.1.



*Fig.2.*

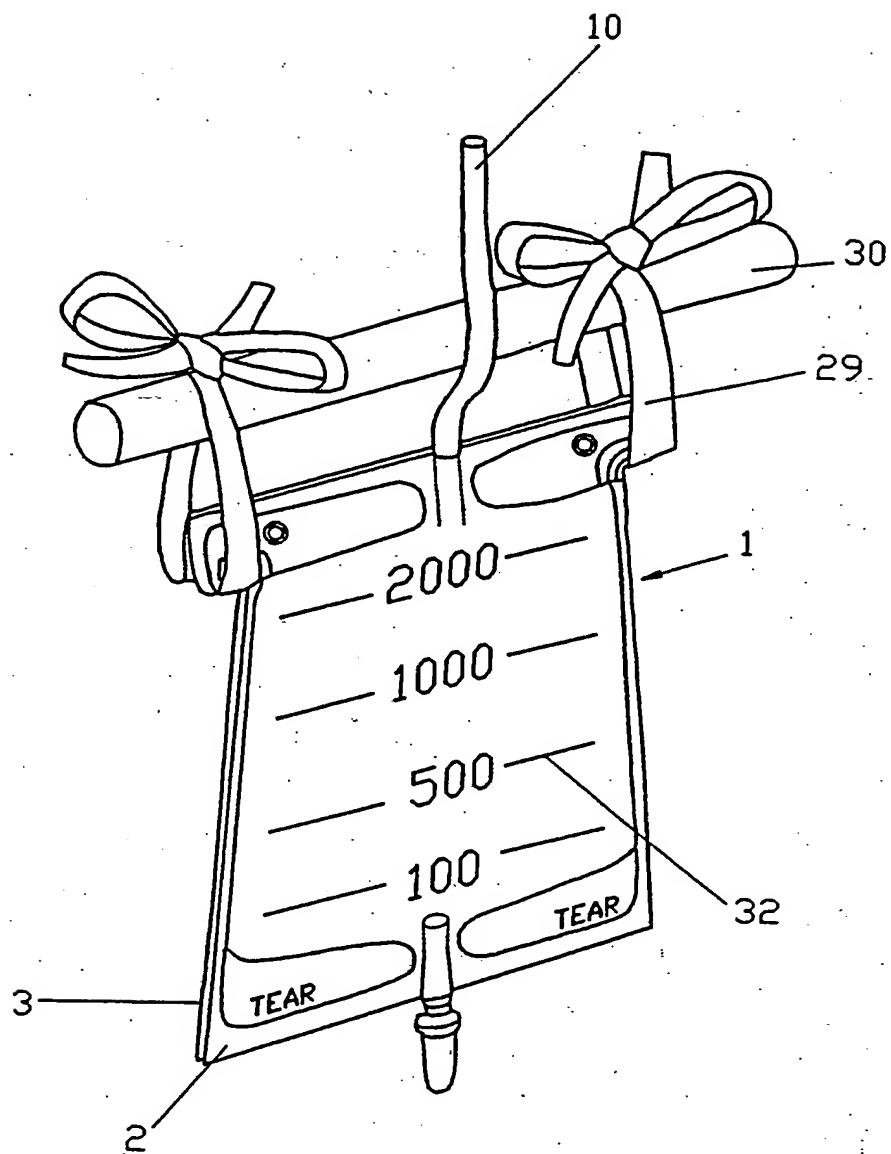


Fig 3:

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 93/00103

## A. CLASSIFICATION OF SUBJECT MATTER

IPC5: A61G 9/00, A61F 5/44

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC5: A61G, A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 3370589 (D.S. SHERIDAN ET AL), 27 February 1968 (27.02.68), detail 20  -----	1-4

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

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